Docket # 97N-511

Memorandum of Meeting

Date: June 22, 1999

Place: Center for Food Safety and Applied Nutrition, FDA, Washington, D.C.

-Participants:

Academia

Mickey Parish, Ph.D., University of Florida (on sabbatical as a Food Safety Policy Analyst, Congressional Research Service)

FDA

Robert Buchanan, Ph.D., Senior Science Advisor
Les Bluhm, Ph.D., Acting Director, Division of HACCP Programs
Terry Troxell, Ph.D., Director, Office of Plant and Dairy, Food and Beverages
Robert Lake, Director, Office of Regulations and Policy
Shellee Anderson, Consumer Safety Officer, Office of Plant and Dairy, Food and Beverages
Rebecca Buckner, Staff Fellow, Office of Plant and Dairy, Food and Beverages
Donald A. Kautter, Jr., Consumer Safety Officer, Division of HACCP Programs

Subject: Use of a 5 log Reduction in Juice and Juice Products

Mickey Parish met with FDA representatives to discuss the use of cumulative 5 log reduction techniques in the production of juice and juice products and what data exists in the academic community to support the reduction techniques. In addition, he discussed his views about the steps in processing of fruit which are critical to maximizing the reduction of the microbial load in juice and fruit.

FDA presented a generic flow for the production of juice from fruit and discussed what information was given to the Agency during the course of the HACCP Pilot Program and the citrus juice technical meetings held in November 1998.

Dr. Parish presented and discussed the "norm" of the citrus industry prior to the Salmonella outbreak in Orlando, FL and the "norm" of the industry after this outbreak.
Prior to the outbreak, normal procedures employed in the citrus industry included the use of a single brush wash with or without an acid fruit wash. The industry's approach prior to the outbreak was to process the fruit as fast as possible to produce as much juice as production would allow. This usually meant that the fruit was washed/brushed in less than 30 seconds. Fruit for juicing primarily came processed (washed/waxed) from packinghouses or from tree-

picked fruit which may have included drops. Fruit picking practices at that time included picking the fruit off the tree, dropping it to the ground and then utilizing workers to pick up this fruit for bagging. Dr. Parish pointed out however, that the problem with the Orlando juice was most likely an unclean production facility, not necessarily the fruit itself. These industry practices have been significantly altered since the outbreak and since FDA's labeling rule and HACCP proposal. Additional washing/brushing and the use of additional sanitizers are now utilized in the industry as well as a greater adherence to using only tree picked fruit (exclusion of drops).

An FDA representative noted that the apple industry was not as developed or evolved as the citrus industry appears to be.

Dr. Parish mentioned that it may be beneficial to provide guidance to the industry regarding the use of multiple brush washers for the cleaning of fruit.

Dr. Parish mentioned that in Florida, the oranges are primarily grown for juicing while in California, the oranges are primarily table oranges.

An FDA representative questioned whether much fresh juice was imported from other countries. Dr. Parish noted that he did not have this information.

An FDA representative questioned if there were technical data available relative to any significant reduction (log reduction) in microbes on the surfaces of the fruit prior to the first washing step and who had this data. Dr. Parish responded that there was little validated data available but that Dr. Steven Pao, Florida Department of Citrus, may have some information relative to this subject. Dr. Pao may also have information relative to microbiological data on "picked" citrus versus "dropped" citrus. Dr. Parish believes that there is approximately a log or less difference between the two types of fruit based on his recollection of prior experiments.

An FDA representative asked Dr. Parish what he believed was the most effective step in the process for reducing microbes on the surface of the fruit. Dr. Parish responded that it was his belief that the brush/washer combination with appropriate chemicals, residence times, concentrations, and mechanical agitation were the most important variables in reducing the microbiological content on the surface of the fruit. Dr. Parish also noted that there are few data showing a difference between small cracks/splits and intact fruit relative to the interior microbial load.

Dr. Parish further explained that it was his belief that the primary purpose of the initial washing step on the fruit was to loosen the soil prior to the brush/washing exercise. This preparatory removal of dirt is to promote more effective sanitation practices. Dr. Parish noted that there are no data to support the contribution of this first washing step to the log reduction.

An FDA representative asked for Dr. Parish's opinion about what the most important steps in the fruit to juice process were in regards to the production of safe juice. Dr. Parish responded that it was his opinion that the brush/washing (with sanitizers) and culling to exclude bad fruit were the

most important steps. He also noted that the Florida Department of Citrus are the primary investigators developing data to support that opinion.

Donald A. Kautter, Jr.